



UNITED STATES PATENT AND TRADEMARK OFFICE


6

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,379	03/04/2002	Brian A. Jones	40021,008	9971
27966	7590	01/12/2004	EXAMINER	
KENNETH E. HORTON KIRTON & MCCONKLE 60 EAST SOUTH TEMPLE SUITE 1800 SALT LAKE CITY, UT 84111			ROBERTSON, JEFFREY	
			ART UNIT	PAPER NUMBER
			1712	
DATE MAILED: 01/12/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 10/091,379	Applicant(s) JONES ET AL. 	
Examiner Jeffrey B. Robertson	Art Unit 1712	

The MAILING DATE of this communication appears on the cover sheet with the correspondence address -- Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 12,13,21,24,27 and 29-35 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14,15,26 and 28 is/are allowed.
- 6) ☒ Claim(s) 1-11,16-20,22,23,25 and 36-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains claims 12, 13, and 29-35 drawn to an invention nonelected with traverse in Paper No. 6. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01. It is noted that claims 21, 24, and 27 remain non-elected species treated as an election without traverse.

Claim Rejections - 35 USC § 103

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-11, 16-20, 22, 23, 25, and 36-38 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ohnaka et al. (U.S. Patent No. 5,194,333).

For claims 1, 2, 5, 6-8, 9-11, 16-20, 23, and 36-38, in column 2, lines 9-31, Ohnaka teaches that polycarbosilane having alkali and acid resistance (stable to hydrolytic cleavage conditions) is used to coat particles of silica gel to provide a chemically stable (durable) packing material for chromatography. Here, Ohnaka indicates that the polycarbosilane is polymeric where "n" is a positive integer. In column 4, line 65, Ohnaka indicates that the monomer used to produce the polycarbosilane is octadecylmethylsilyl dichloride. For claims 3, 4, and 17, this monomer includes a chloride leaving group and an alkyl group (methyl group). For claims 22 and 25, in Example 1, column 4, line 65 through column 5, line 18, Ohnaka teaches that the monomer is polymerized prior to coating the silica surface.

For claims 1, 9, 10, 16, 23, 36-38, Ohnaka teaches in column 4, lines 36-58, that the silica gel surface is modified with vinyl functional groups to reinforce the bond between the polycarbosilane and the silica gel. The representation in column 4, lines 50-59, shows that the carbosilane polymer is bonded to the silica surface through an ethylene linkage. Ohnaka does not expressly teach that the organosilane polymer is bonded through at least three attachment points as set forth in the claims. However, in Example 1, column 4, line 65 through column 5, line 31, Ohnaka teaches a silica gel carrier containing vinyl groups as that is coated with a polysilane having a molecular weight of 1810.

It is the examiner's position that this process and subsequent conversion to the polycarbosilane inherently would result in a polymer bound to the silica carrier at least three attachment points. The molecular weight of the polysilane indicates that during

conversion to the polycarbosilane there would inherently be more than three sites that bond to the modified silica surface. In addition, since there are 5 grams of the modified silica surface containing vinyl groups, there would inherently be more than three bonding sites on the surface to which the carbosilane polymer would bond. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F. 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Response to Arguments

5. Applicant's arguments filed 10/24/03 have been fully considered but they are not persuasive. Applicant argues that the Ohnaka et al. reference does not teach that the polycarbosilane is bonded to the silica gel through three attachment points, and that the silica surface must be pre-functionalized to provide groups capable of forming bonds to the polycarbosilane. The examiner disagrees. First, the examiner disagrees that the polycarbosilane is not bonded to the silica surface. As set forth in the rejection above, Ohnaka does teach that the polycarbosilane is bonded to the silica surface, when the surface is first modified with functional groups. The fact that the surface must be modified with functional groups to effectuate the bonding is irrelevant to the present claims, which require only that the polycarbosilane is bonded to the surface through

three attachment points. In addition, applicant argues that Ohnaka cannot teach that the bonding occurs through three attachment points. As explained in the rejection set forth above, in Example 1 of Ohnaka the conditions under which the coating is applied would inherently produce such a bonding arrangement because of the modified silica surface and the molecular weight of the polysilane precursor.

Last, the claim objections set forth in the previous office action as well as the rejections made using the McGill, Glajch, and Kirkland references have been withdrawn in light of applicant's amendments and comments.

Allowable Subject Matter

6. Claims 14, 15, 26, and 28 are allowed.

Conclusion

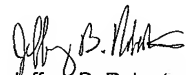
7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.


Jeffrey B. Robertson
Primary Examiner
Art Unit 1712

JBR